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EXAMINER	
FISCHER, JUSTIN R	

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1733	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/607,070	YURJEVICH ET AL.	
	Examiner	Art Unit	
	Justin R Fischer	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 June 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) *2-6 and 18-20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,7-17 and 21-31* is/are rejected.

7)☐ Claim(s) _ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2,3* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. This application contains claims directed to the following patentably distinct species of the claimed invention: a runflat tire having a pair of axially-spaced bead portions, a pair of axially-spaced sidewalls, and a sidewall insert in each of said sidewalls, such that each sidewall has a cantilever portion including either a portion of the sidewall insert (Figure 2), a portion of the bead portion (Figure 3), or both (Figure 5).

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1 and 21-31 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the

case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

2. During a telephone conversation with Mr. Fred Zollinger on Monday, November 19, 2001 a provisional election was made without traverse to prosecute the invention of a runflat tire wherein each sidewall portion has a cantilever portion including a portion of the bead portion, claims 1, 7-17, and 21-31. Affirmation of this election must be made by applicant in replying to this Office action. Claims 2-6 and 18-20 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

3. Rejoinder will be considered upon the indication of allowable subject matter on the basis thereof.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 10, 11, 13-16 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 10 and 11, applicant has defined the angle of the cantilever portion to be within a range of ±30° with respect to the axis of rotation of the tire. However, it is unclear exactly what portion of the "cantilever portion" is used to measure such an angle, rendering the claims indefinite. It is suggested that the claim

be amended as follows to provide a clear definition of the claimed invention (such language would necessitate defining the body plies in the independent claim to provide proper antecedent basis):

- The tire of claim 9, wherein the cantilever portion is disposed at an angle in the range of +30 degrees to –30 degrees with respect to the axis of rotation of the tire, as measured along a reference line that is tangent to the body plies in the cantilevered portion.

Regarding claims 13-17, the language "between the first and second body plies" appears in line 22 of claim 13. It appears that applicant has attempted to define the location of the bead portion (i.e. bead core and bead filler) as being disposed "between the first and second plies". However, the use of such language does not provide a clear and concise understanding of the claimed invention, rendering the claims indefinite. As depicted in all of the figures, the first and second body plies are substantially in an abutted assembly, with the bead portion being disposed between the main portions of said body plies and the turn-up portions of said body plies. It is suggested that such language be incorporated into the claims to better define the scope of the claimed invention.

With respect to claim 23, the language "high modulus low hysteresis material" appears in lines 13 and 14. The use of such broad language (high and low) does not provide an adequate description of the claimed invention, rendering the claim indefinite. It is the examiner's belief that applicant intended "high modulus low hysteresis" to be defined in an analogous manner to claim 22. It is suggested that such language be incorporated into the claim to clearly define the terms "high" and "low". For examination

purposes, the ranges defined in claim 21 will be associated with the terms "high" and "low".

Regarding claims 28-30, the limitation "body cords" appears on multiple occasions. There is insufficient antecedent basis for this limitation in the claim. It should be noted that applicant has defined first and second body plies, but it is unclear if the term "body cord" is directed to the first or second body plies or if the term refers to the cords of body plies in general.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

overcome w/amend

7. Claims 1, 7-11, and 17 rejected under 35 U.S.C. 102(e) as being anticipated by Peda (US 6,044,884). As best depicted in Figure 1, Peda teaches a construction for pneumatic tires having improved emergency running properties or runflat capability. The reference depicts a pair of axially-spaced bead portions, a pair of axially-spaced sidewalls (8), and a sidewall insert or reinforcement filler (9), such that each of said sidewalls has a radial portion and a cantilever portion (with respect to bead portion).

With respect to claims 7 and 8, it is evident from Figure 1 that "a portion" of the bead portion (bead filler) extends in an axially outward direction, thus suggesting that the cantilever portion includes a portion of the bead portion.

Regarding claim 9, Peda suggests that the sidewall insert can extend to the bead area, thus forming a design in which the axially outer end of the bead portion is disposed adjacent the radially inner end of the sidewall insert.

With respect to claim 10, in describing said cantilever portion, the reference states that the angle should be between 0° and 20° relative to the axial direction of the tire (Column 4, Lines 30-38).

Regarding claim 11, Peda depicts a crescent-shaped sidewall insert in Figure 1 (discussion of insert geometry in Column 4, Lines 56-60).

With respect to claim 17, Peda clearly illustrates a bead portion composed of a bead core and a bead filler. In describing the carcass reinforcement (body plies), the reference describes the use of a one-or multi-ply carcass whereby the plies are anchored to bead cores by winding said plies about the bead cores (Column 3, Lines 60-65). Thus, the bead filler is disposed between the body plies in the cantilever portion of the sidewall.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 21-23 rejected under 35 U.S.C. 103(a) as being unpatentable over Peda and further in view of Spragg et al. (US 5,769,980). As previously mentioned, Peda suggests a tire design in accordance to the limitations outlined in claim 1. Furthermore,

it is evident from Figure 1 of Peda that the bead portion contains a bead filler (7). In describing the properties of the sidewall insert and bead filler, Peda only suggests that the sidewall insert rubber should have a Shore A Hardness greater than 70, as required by the claimed invention. In any event, it is extremely well known and conventional to construct runflat tires in which the bead filler and sidewall insert are composed of the same compound, such that said compound has the properties defined by the claimed invention. For example, Spragg et al. suggest a runflat tire in which the bead filler and sidewall insert are formed from the same rubber compound having a hardness, modulus, and loss tangent within the ranges suggested by the claimed invention. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to form a bead filler and sidewall insert with the same composition, as suggested by Spragg et al., in the general tire construction of Peda, as set forth below.

With respect to claims 21-23, Peda only describes the hardness of the sidewall insert, suggesting that it should be greater than 70 Shore A. Though the reference is silent with respect to additional rubber properties, one skilled in the art at the time of the invention would have readily appreciated and expected the bead filler and sidewall insert to be formed of the same high modulus, low hysteresis material. An example of such a conventional design can be found in Spragg et al. (Column 5, Lines 64+). The ranges for hardness, modulus, and loss tangent suggested by Spragg et al. are nearly identical to those defined by applicant. Furthermore, the reference specifically states that improved run-flat durability and ride characteristics are obtained when the bead filler and sidewall insert are formed with the same compound. Thus, one of ordinary skill in the art at the time of the invention would have found the use of high modulus, low

hysteresis rubber compounds to be conventional in the construction of bead fillers and sidewall inserts for the reasons detailed above.

10. Claims 24-29 rejected under 35 U.S.C. 103(a) as being unpatentable over Peda in view of Powers (US 3,392,772). As described above, Peda teaches all the limitations of the claimed invention with respect to the general tire construction. The reference, however, is silent with respect to the use of a stiffener ring in each of the sidewall cantilever portions. In any event, Powers suggests the use of stiffener rings in similar safety tires having sidewall cantilever portions, as best depicted in Figures 1-3, to resist lateral distortion of the sidewalls (Column 2, Lines 53-57). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a pair of stiffener rings in each of the sidewall cantilever portions, as suggested by Powers, in the general runflat tire construction of Peda, as set forth below.

With respect to claim 24, the run-flat tire of Peda clearly contains a sidewall insert and a sidewall cantilever portion, thereby forming a profile having a narrow rim and a close bead assembly (beads are closer together). Powers teaches the use of stiffener rings in similar safety tires having sidewall cantilever portions to resist lateral distortion of the sidewalls. Thus, it is evident that the stiffener ring assembly described by Powers would be beneficial in an analogous manner when placed within the run-flat tire of Peda. Therefore, one of ordinary skill in the art at the time of the invention would have readily appreciated the use of stiffener rings to provide the aforementioned benefits.

Regarding claims 25-30, Powers describes a plurality of arrangements for said stiffener rings, including on the interior of the tire sidewalls and within the tire sidewalls. Furthermore, it is evident from Figures 1 and 2 that such a description is directed toward

embodiments in which the stiffener ring is disposed inside the body cords and outside the body cords. Regarding claim 29, though the reference does not specifically describe the arrangement "outside the body plies", the reference does communicate the general use of stiffener rings in a variety of locations in the bead region and one of ordinary skill in the art at the time of the invention would have recognized and appreciated locations in the bead region not specifically depicted, such as "outside the body plies". With specific respect to claim 30, Figure 3 depicts such a design in which at least two belt layers are used and the stiffener rings are disposed between body plies.

11. Claim 31 rejected under 35 U.S.C. 103(a) as being unpatentable over Peda in view of Hirayama (JP 63141809). As previously mentioned, Peda is directed toward a run-flat pneumatic tire having a pair of sidewall inserts and the specific cantilever construction defined by the claimed invention. Though the reference is silent with respect to the use of a run-flat band element in the crown portion, such a design has been used in combination with sidewall inserts to achieve the desired run-flat characteristics, as evidence by Hirayama (Figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a run-flat band element in the crown portion, as suggested by Hirayama, in the general tire construction of Peda, as set forth below.

The use of run-flat band elements, which provide compression strength that is not present in conventional breaker belts, are well known and conventional in the tire industry. Furthermore, the use of run-flat band elements in combination with run-flat inserts has been previously implemented to achieve the desired run-flat characteristics

(i.e. compression strength in addition to sidewall rigidity). For example, Hirayama clearly depicts such a configuration in Figure 1. Thus, one of ordinary skill in the art at the time of the invention would have readily appreciated a design incorporating both a band element and a sidewall insert to optimize the run-flat performance.

12. Claims 1, 7-11, 17, and 21-23 rejected under 35 U.S.C. 103(a) as being unpatentable over Boileau (US 3,631,913) in view of Spragg et al. As best depicted in Figures 4-6, Boileau depicts a pneumatic tire having a pair of axially-spaced bead portions and a pair of axially-spaced sidewalls, such that each of said sidewalls has a radial portion and a cantilever portion (with respect to bead portion). However, the reference is silent with respect to the inclusion of sidewall inserts to form a tire with run-flat capability. In any event, the use of sidewall inserts to provide such a function is extremely well known and conventional in the tire industry. For example, Spragg et al. describe the use of sidewall inserts having high flex fatigue, high modulus, and low hysteresis to enable a tire to run in an underinflated or non-inflated condition. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the tire of Boileau with a pair of conventional, sidewall inserts, as suggested by Spragg et al., as set forth below.

With respect to claim 1, Boileau clearly depicts (Figures 4-6) the manufacture of pneumatic tires having a cantilever portion inclined with respect to the bead portion. Though Boileau is not specifically directed to a "run-flat tire", the reference does suggest a tire having greater longitudinal, lateral, and torsional rigidity (in sidewalls) and also having equal or greater radial extensibility and compressibility (in the sidewalls) than conventional tires (Column 1, Lines 55-61). In addition to describing a cantilever design

to obtain these characteristics, the reference incorporates a stiffening means, such as one or more plies of wires or an extra thickness of hard or soft rubber, in the sidewall region to provide adequate rigidity while maintaining ride comfort (Column 3, Lines 15-25). Thus, the reference does suggest the use of additional rubber layers in the sidewall to enhance rigidity and compression characteristics (Figure 6 clearly depicts such a rubber layer (25) in the sidewall). Therefore, the use of a conventional run-flat insert, as described by Spragg et al., in the tire of Boileau would have been readily appreciated by one of ordinary skill in the art at the time of the invention since in addition to providing adequate rigidity and compression characteristics, such an insert allows travel in an underinflated or non-inflated condition.

Regarding claims 7 and 8, it is evident from Figures 4-6 that the cantilever portion includes the entire bead portion and that the bead portion includes a cantilevered portion disposed in the cantilever portion of the sidewall.

With respect to claim 9, as previously noted, the bead filler of Boileau covers the entire cantilever portion and extends slightly in a radially outward direction. In attempting to modify Boileau by incorporating a pair of sidewall inserts, it is the examiner's position that said inserts would extend over the entire sidewall region, as is conventional in similar run-flat tires. For example, Spragg et al. depict a sidewall insert extending along the entire sidewall region. Thus, the sidewall insert would be positioned in such a manner that the axially outer end of the bead portion is disposed adjacent the radially inner end of said insert.

Regarding claim 10, Boileau clearly depicts a cantilever design having an inclination angle between ±30° with respect to the axis of rotation of the tire. The examiner has illustrated in Figure 5, for example, the inclination angle of the tire design.

With respect to claim 11, the sidewall inserts in conventional run-flat tires are crescent-shaped, as depicted by Spragg et al.

Regarding claim 17, Figures 4-6 of Boileau depict a bead portion composed of a bead core and a bead filler. Furthermore, it is evident that a plurality of body plies are included in each of the tire designs, with the bead filler being disposed between the body plies in the cantilever portion of the sidewall.

With respect to claims 21-23, the use of high modulus, low hysteresis material for the sidewall insert is extremely well known and conventional in the tire industry. For example, Spragg et al. describe the use of a material having a hardness, modulus, and loss tangent in accordance to the limitations of the claimed invention. In addition, Spragg et al. suggest a design in which the bead filler and sidewall insert are formed of the same material to obtain improved run-flat durability and ride characteristics. Therefore, one of ordinary in the art at the time of the invention would have readily appreciated and expected such a design to provide optimum run-flat performance.

13. Claims 24-30 rejected under 35 U.S.C. 103(a) as being unpatentable over Boileau and Spragg et al. as applied to claim 1 above, and further in view of Powers. As previously mentioned, Boileau in view of Spragg et al. describe a run-flat tire having a cantilever design in accordance to the limitations of the claimed invention. The reference, however, is silent with respect to the use of a stiffener ring in each of the sidewall cantilever portions. In any event, Powers suggests the use of stiffener rings in

similar tires having sidewall cantilever portions, as best depicted in Figures 1-3, to resist lateral distortion of the sidewalls (Column 2, Lines 53-57). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a pair of stiffener rings in each of the sidewall cantilever portions, as suggested by Powers, in the general tire construction of Boileau, as set forth below.

Regarding claim 24, the tire of Boileau has a profile with a narrow rim and a close bead assembly (beads are closer together) as a result of the cantilever construction. Powers teaches the use of stiffener rings in similar tires having sidewall cantilever portions to resist lateral distortion of the sidewalls. Thus, it is evident that the stiffener ring assembly described by Powers would be beneficial in an analogous manner when placed within the tire of Boileau. Therefore, one of ordinary skill in the art at the time of the invention would have readily appreciated the use of stiffener rings to provide the aforementioned benefits.

Regarding claims 25-30, Powers describes the use of stiffener rings in a variety of bead locations to resist lateral distortion in the sidewall region in similar cantilever designs. The description of these locations has been previously set forth in paragraph 11 above.

14. Claim 31 rejected under 35 U.S.C. 103(a) as being unpatentable over Boileau and Spragg et al. as applied to claim 1 above, and further in view of Hirayama. Boileau in view of Spragg et al. teach a run-flat tire having a cantilever design, such that a pair of sidewall inserts extend along the radial portion of said cantilever design. Though the references are silent with respect to the use of a run-flat band element, such a design is conventionally employed to obtain optimum run-flat characteristics. For example,

Hirayama, as mentioned in paragraph 13, suggests that the combination of a run-flat band element and a pair of sidewall inserts provides the necessary compression strength and sidewall rigidity to effectively provide a tire with the ability to run in an unpressurized condition. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to include both run-flat reinforcing elements (band element and insert), as suggested by Hirayama, in the general tire construction of Boileau in view of Spragg et al., for the aforementioned benefits.

15. Claims 1, 7, 8, and 12-17 rejected under 35 U.S.C. 103(a) as being unpatentable over Paonessa et al. (US 5,871,602) in view of Boileau. Paonessa et al. teach the manufacture of pneumatic run-flat tires having a pair of axially spaced bead portions and a pair of axially spaced sidewalls, such that each of the sidewalls includes a sidewall insert. However, the reference does not depict a cantilever design in the bead portion. Boileau, on the other hand, suggests the use of cantilever designs to increase the rigidity of the tire without sacrificing the radial extensibility and compressibility of the tire. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a cantilever design, as suggested by Boileau, in the general run-flat tire design of Paonessa et al., as et forth below.

With respect to claim 1, the pneumatic run-flat tire of Paonessa et al. is best depicted in Figure 8. It should initially be noted that the reference clearly depicts all the features of the claimed invention with the exception of the cantilever design. Furthermore, the reference does suggest that the carcass plies in the bead portion be disposed at an angle with respect to the axis of rotation of the tire; however, no specific angle is provided to suggest a cantilever portion as defined by the claimed invention

(±30° with respect to the axis of rotation). In any event, Boileau states that the formation of a cantilever design (depicted in Figures 4-6) results in greater rigidity of the sidewalls while maintaining or increasing the radial extensibility and compressibility of the sidewalls (Column 1, Lines 55-70). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a cantilever construction in the run-flat tire of Paonessa et al. for the aforementioned benefits.

Regarding claims 7 and 8, it is evident from Figure 8 that the modified tire (inclusion of cantilever design) would have a cantilever portion that consisted of a portion of the bead portion.

With respect to claim 12, Figure 8 clearly depicts the extension of the bead portion (bead filler) into the crown portion, such that the radially outer end of the bead portion is adjacent the radially outer end of the sidewall insert.

Regarding claims 13 and 17, though Figure 8 only depicts one carcass ply (38), the reference describes the use of a conventional multi-ply carcass reinforcement structure. In this case, the bead portion (bead core and bead filler) would be disposed between the main and turnup portions of the multiple carcass plies, as one of ordinary skill in the art at the time of the invention would have expected.

With respect to claims14 and 15, Figure 8 depicts a single carcass ply in which said ply is turned up around the bead core. As noted above, the reference details the use of multiple carcass plies and specifically states that a variety of conventional turnup configurations can be employed (not necessary for turnup to extend into crown as depicted). Furthermore, in the absence of any unusual turnup structure, one of ordinary skill in the art at the time of the invention would have readily appreciated and expected

a first carcass ply (main portion is axially inward) to have a turnup portion that is axially outward of a second carcass ply.

Regarding claim 16, the sidewall insert (42) of Figure 8 is crescent-shaped.

16. Claims 21-23 rejected under 35 U.S.C. 103(a) as being unpatentable over Paonessa et al. and Boileau, as applied to claim 1 above, and further in view of Spragg et al. As noted above, Paonessa et al. in view of Boileau teach a pneumatic run-flat tire having a cantilever design in order to increase the rigidity of the sidewalls without sacrificing radial extensibility and compressibility. Furthermore, the reference suggests the use of the same rubber compound for the bead filler (46) and the sidewall insert (42). In describing this compound, Paonessa et al. states that the Shore A Hardness should range between 50 and 85, in accordance to the limitations of the claimed invention. Though the reference is silent with respect to the modulus and the hysteresis, such rubber compounds are conventionally used in the manufacture of sidewall rubber reinforcements, as evidence by Spragg et al. (Column 5, Line 64-Column 6, Line 7). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the same rubber compound (having the properties of the claimed invention) in the bead filler and the sidewall insert, as suggested by Spragg et al., in the general tire construction of Paonessa et al. in view of Boileau, as set forth below.

With respect to claims 21-23, Paonessa et al. does suggest the same rubber compound for the bead filler and the sidewall insert, such that the Shore A Hardness is between 50 and 85 (Column 9, Lines 52+). Though the reference is silent with respect to the modulus and loss tangent, one of ordinary skill in the art at the time of the

invention would have expected the additional properties to fall within applicant's conventional and well known range. For example, Spragg et al. define a range for the modulus, hardness, and loss tangent of bead filler and sidewall insert rubbers that is almost identical to that disclosed by applicant. Therefore, in viewing Paonessa et al., one skilled in the art would have expected the modulus and loss tangent of the relevant rubber compounds to be within the conventional range defined by the claimed invention.

17. Claims 24-30 rejected under 35 U.S.C. 103(a) as being unpatentable over Paonessa et al., Boileau, and Spragg et al. as applied to claim 1 above, and further in view of Powers. As previously mentioned, Paonessa et al. in view of Boileau and Spragg et al. describe a run-flat tire having a cantilever design in accordance to the limitations of the claimed invention. The reference, however, is silent with respect to the use of a stiffener ring in each of the sidewall cantilever portions. In any event, Powers suggests the use of stiffener rings in similar tires having sidewall cantilever portions, as best depicted in Figures 1-3, to resist lateral distortion of the sidewalls (Column 2, Lines 53-57). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a pair of stiffener rings in each of the sidewall cantilever portions, as suggested by Powers, in the general tire construction of Boileau, as set forth below.

Regarding claims 24-30, it has been previously stated in Paragraphs **** and **** above that the use of stiffener rings in similar cantilever constructions is conventional in order to resist lateral distortion in the sidewall region. Furthermore, Powers clearly suggests a plurality of locations for the stiffener rings, including connected to the sidewall inner surface and embedded within the sidewalls.

18. Claim 31 rejected under 35 U.S.C. 103(a) as being unpatentable over Paonessa et al. and Boileau as applied to claim 1 above, and further in view of Hirayama. Paonessa et al. in view of Boileau suggest a run-flat tire having a cantilever construction defined by a portion of the bead portion. Though the reference is silent with respect to the use of a run-flat band element, such a design is conventional and well known in the tire industry to provide adequate compression strength, in addition to increased rigidity in the sidewalls. For example, Hirayama depicts a run-flat tire incorporating both a run-flat band element and a sidewall insert so as to obtain the previously mentioned benefits. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a run-flat band element in combination with a sidewall insert design for the aforementioned benefits.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Noma (US 5,016,697) and Powers (US 3,486,547). Noma is directed toward a safety tire having a cantilevered portion (inclination angle is approximately 25°) composed of at least "a portion" of the bead portion, as best depicted in Figure 1). Furthermore, the reference identifies the use of sidewall inserts but suggests that such a design is not sufficient in its load supporting effect. In any event, current run-flat technology does provide adequate load supporting capabilities. Powers depicts a pneumatic tire having a cantilever design formed from the extension of the bead filler, as best depicted in Figure 2.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R Fischer** whose telephone number is **(703) 605-4397**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Justin Fischer

November 30, 2001

JEFF H. AFTERGUT
PRIMARY EXAMINER
GROUP 1300